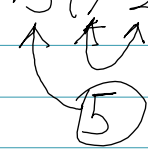


Math 0361

## Practice Test 1

Simplify the expression:

1.  $5[5 + 5(7 - 2)]$

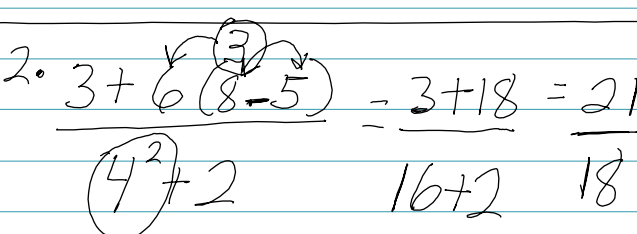


$$5[5 + 25]$$

$$5[30]$$

$$\boxed{150}$$

2.  $3 + 6(8 - 5) = \frac{3 + 18}{4^2 + 2} = \frac{21}{16 + 2} = \frac{21}{18}$



$$\frac{21 \div 3}{18 \div 3} = \boxed{\frac{7}{6}}$$

Evaluate the expression.

3.  $x^2 - 5y + x$  when  $x = 20$  and  $y = 6$

$$20^2 - 5(6) + 20$$

$$400 - 30 + 20$$

$$370 + 20 = \boxed{390}$$

4.  $\frac{x}{z} + 3y$  when  $x = 6$ ,  $y = 3$ , and  $z = 2$

$$\frac{6}{2} + \underline{3(3)}$$

$$3 + 9 = \boxed{12}$$

Simplify

5.  $1m - 7m - 3m + 5$

$-6m - 3m + 5$

$-9m + 5$

6.  $4(x+2) - 1(2x-7)$

$4x + 8 - 2x + 7$

$2x + 15$

7. Subtract  $9x+10$  from  $6x-10$

Write 2nd equation 1st:  $6x - 10$

change signs →

$-9x + 10$

$-3x - 20$

8. Write the following phrase as an algebraic expression and simplify. Let  $x$  represent the unknown number.

Triple a number, minus the sum of number and three  
 parentheses

$3x - (x + 3)$

$3x - 1(x + 3)$

$3x - 1x - 3$

$2x - 3$  ✓

Solve the equation:

9.

$$x + 2 = 4$$

To get x alone

$$-2$$

$$-2$$

do opposite

$$x = 2$$

10.

$$-4(x + 2) + 5x = 12$$

$$-4x - 8 + 5x = 12$$

$$1x - 8 = 12$$

$$+8 \quad +8$$

$$1x = 20$$

11.

$$-9x = 81$$

$$-9 \quad -9$$

divide by -9

$$x = -9$$

12.

$$\frac{3}{7}x = -9 \quad \text{Get rid of fraction}$$

$$\frac{21}{7}x = -63$$

by multiply both sides by 7

$$3x = -63$$

$$x = -21$$

$$13. \quad 8y + 3(y-6) = 4(y+1) - 2$$

$$\downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow \quad \downarrow$$

$$8y + 3y - 18 = 4y + 4 - 2$$

$$\begin{array}{r} 11y - 18 \\ - 4y \end{array} = \begin{array}{r} 4y + 4 \\ - 4y \end{array}$$

$$\begin{array}{r} 7y - 18 = 2 \\ + 18 \quad + 18 \end{array}$$

$$\begin{array}{r} 7y \\ \hline 7 \end{array} = \begin{array}{r} 20 \\ \hline 7 \end{array}$$

$$\boxed{y = \frac{20}{7}}$$

Letters  
Left

Numbers  
Right

Divide

$$14. \quad \frac{5x}{5} + \frac{4}{5} = \frac{-4(5)}{5}$$

Multiply  
5 on top

$$\frac{10x}{5} + \frac{20}{5} = \frac{-20}{5}$$

$$\begin{array}{r} 2x + 4 = -4 \\ - 4 \quad - 4 \end{array}$$

$$\begin{array}{r} 2x = -8 \\ \hline 2 \end{array}$$

$$\boxed{x = -4}$$

$$15. \quad \begin{array}{r} 0.7x - 1.6 \\ + 1.6 \end{array} = \begin{array}{r} 0.5 \\ + 1.6 \end{array}$$

$$\begin{array}{r} 0.7x \\ \hline 0.7 \end{array} = \begin{array}{r} 2.1 \\ \hline 0.7 \end{array}$$

$$\boxed{x = 3}$$

$$16. \quad \frac{7x}{10} - \frac{1}{5} = \frac{4(10)}{5}$$

Multiply  
Top by 10

$$\frac{70x}{10} - \frac{10}{5} = 40$$

$$\begin{array}{r} 7x - 2 = 40 \\ + 2 \quad + 2 \end{array}$$

$$\begin{array}{r} 7x = 42 \\ \hline 7 \end{array}$$

$$\boxed{x = 6}$$



Using  $x$  as the unknown number, write the statement as an equation and then solve for  $x$ .

17.

Three times a number, minus 6, is equal to.

two times a number, plus 7.

$$\begin{array}{r} 3x - 6 \\ - 2x \\ \hline x - 6 \end{array} = \begin{array}{r} 2x + 7 \\ - 2x \\ \hline 7 \end{array}$$
$$\begin{array}{r} x - 6 \\ + 6 \\ \hline x = 13 \end{array}$$

$x = 13$

18. A 42 inch board is to be cut into three pieces so the second piece is twice as long as first piece and the third piece is 4 times as long as first piece. If  $x$  represents the length of first piece, find the lengths of all three pieces.

$$\text{1st} + \text{2nd} + \text{3rd} = 42$$

$$1x + 2x + 4x = 42$$

$$\begin{array}{r} 7x = 42 \\ \hline 7 \end{array}$$

$$x = 6$$

$$\text{1st} = 6$$

$$\text{2nd} = 2(6) = 12$$

$$\text{3rd} = 4(6) = 24$$

19. A 17 foot piece of string is cut into two pieces so that the longer piece is 5 feet longer than the shorter piece. If the shorter piece is  $x$  feet long, find lengths of both pieces

$$1st + 2nd = 17$$

$$x + x + 5 = 17$$

$$\begin{array}{r} 2x + 5 = 17 \\ -5 \quad -5 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{12}{2}$$

$$(x = 6)$$

$$\begin{array}{l} 1st = 6 \quad \checkmark \\ 2nd = 6 + 5 = 11 \quad \checkmark \end{array}$$

20. The left and right page numbers of an open book are two consecutive integers whose sum is 455. Find these page numbers.

$$1st + 2nd = 455$$

$$x + x + 1 = 455$$

$$\begin{array}{r} 2x + 1 = 455 \\ -1 \quad -1 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{454}{2}$$

$$(x = 227)$$

consecutive means  
add 1

$$\begin{array}{l} 1st = 227 \quad \checkmark \\ 2nd = 228 \quad \checkmark \end{array}$$